Summary

A study was conducted to determine the effects of polyethylene glycol (PEG) and sample preservation method on concentration and astringency (i.e. capacity of tannins to bind protein) of condensed tannins (CT) in tropical legumes. Leaves from *Desmodium ovalifolium* were subjected to three treatments: T1: fresh forage + PEG, samples frozen; T2: fresh forage + PEG, samples sun-dried, and T3: sun-dried forage + PEG. Five concentrations (0, 15, 25, 35, and 45 g/kg of DM) of PEG (MW 8000) were included in each treatment. Sun-dried leaves of *Flemingia macrophylla* were also subjected to the same five levels of PEG used with *D. ovalifolium*. Samples from the different treatments and legume species were analyzed for extractable and bound CT with a modified butanol-HCl procedure and for astringency using the radial diffusion assay and bovine serum albumine as the protein source. Extractable CT were affected ($P < 0.05$) by PEG, but both forage preservation method and legume species x PEG interactions ($P > 0.05$) were observed. Increasing the concentration of PEG resulted in an exponential decline of extractable CT, but a point was reached (42 to 61 g/kg DM) where further increments of PEG resulted in only small changes in extractable CT. This

suggested the presence of extractable CT that were non-reactive with PEG in the legumes tested. Extractable CT from sun-dried *D. ovalifolium* were more astringent than those from sun-dried *F. macrophylla*. However, astringency of CT from *D. ovalifolium* was lower ($P < 0.05$) in frozen samples as compared with sun-dried samples, regardless of PEG concentration. A cuadratic relationship was observed between astringency of CT and PEG concentration, which suggested that CT with different affinity for protein were present in the legumes evaluated. Results indicate that PEG is useful for reducing extractable CT in fresh or dried forage. However, the effect of PEG on extractable CT and astringency should be established for each legume species prior to their use in feeding experiments.